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AMERICAN NURSEYMAN

Chief Exponent of the American Nursery Trade

Vol. LIX No. 6

MARCH 15, 1934

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13

IN THIS ISSUE

Peat Moss Aids in Transplanting Trees

Successful Tests with Peat Moss in Moving Large Trees

Key to Evergreen Ilex

L. C. Chadwick Writes on Identification and Uses

The Open Price Plan

P. J. van Melle Presents the Retailer's Viewpoint

Forty-seven Years of Selling

How Michigan Firm Built Large Mail-order Business

Better Rock Plants

Sixteen Newer Varieties Described

State Association News

AMERICAN NURSEYMAN PUBLISHING CO.

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AMERICAN NURSERYMAN



The Mirror of the Trade

Chief Exponent of the Nursery Trade

F. R. KILNER, Editor

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EDITORIAL communications on subjects con-
nected with nurseries, arboriculture or other
phases of commercial horticulture are welcomed
by the editor. Also articles on the subjects and
papers prepared for conventions of nursery
associations.

THE "new deal" or the N. R. A. is
permanently with us President Roosevelt
declared March 5.

LANDSCAPE development should begin
with the nurseryman. His office, home
and other buildings should show his skill.
Nothing is so forceful a sales agent as
a show ground. This need not be an
elaborate array of specimens. A skillful
planting, even though simple, proves at-
tractive to buyers of nursery stock.

ORDER files indicate that the demand
for nursery stock is larger this spring
than the past few years. If signs of
betterment have not appeared in your
office, possibly you need to do some ex-
tra pushing to stir up your customers.
Many nurserymen have relaxed their ef-
forts in the period of light demand. It
will pay you to go after business ener-
getically now.

THE OPEN PRICE PLAN.

Whatever the final view of govern-
ment authorities, the open price plan
was one of the most important fea-
tures of the code and marketing agree-
ment submitted to the nursery trade.
The high interest it held for nursery-
men was demonstrated in the discus-
sions of the code and agreement,
wherever held. No other feature vied
with it in the amount of attention re-
ceived.

While the administration has de-
clared that no codes containing open
price plans will be received for the
present, this feature of the nursery-
men's code continues to be discussed
by the trade. Some means of estab-
lishing quotations which may be gen-
erally recognized as a basis for prices,
instead of those of unregulated com-
petition, is desired—that is quite ob-
vious. The difficulty of arriving at a
fair determination of such quotations
is equally obvious. Hence the need for
thorough discussion of the subject be-
fore the time comes for final decision.
An able contribution appears in this
issue, from P. J. van Melle, secretary
of the Allied Retail Nurserymen's As-
sociations, a group of eastern New
York organizations. Others will be wel-
come for subsequent issues.

SENDING your wholesale catalogue or
trade list to The American Nurseryman,
as each issue appears, will mean money
to you. Not only are such catalogues
reviewed in the magazine, but they are
placed on file in order that inquiries of
readers may be answered. Sources of
plants are frequently asked, and queries
of this nature are heaviest in spring.
To answer these most helpfully, a com-
plete file of catalogues is desired by the
editor, and you are urged to send in
yours.

BUSINESS CLOSE TO 1933 PEAK.

Business activity is likely to break
the 1933 top established last July with-
in the next few weeks, unless strikes or
the repercussion of the shorter work
week program of the administration in-
terfere with the current upward trend.

While coal production and electric
power output will commence their sea-
sonal spring decline shortly, steel and
automobile operations are likely to ex-
pand further. Moreover, a rise of at
least the normal seasonal proportions is
currently expected to occur in petroleum
output, lumber production and general
retail trade.

THE DRIVE ON PROFIT MARGINS.

The current N. R. A. conference in
Washington has come to be regarded by
many business men as the first step in
a premeditated campaign to narrow the
margin of profit in industry without
further delay.

The administration has launched this
campaign both as part of its general ef-
fort to effect a more equal distribution
of wealth, and in the interests of what
it regards as economic stability through
broader distribution of purchasing
power, it is believed.

In enterprises where managements are
not yet certain that cost increases caused
by the original N. R. A. codes can be
absorbed successfully in the future, the
sweeping character of this new cam-
paign has been a source of great uneasiness.

Financial stability for business will
not be assured, there is good reason to
believe, until the administration comes
to regard profits as the regulating force
in industry, rather than as a source of
purchasing power supplementary to
wages and salaries.

INDEX TO ADVERTISEMENTS IN THIS ISSUE

Albert, Theo.	Rare Nursery Stock	13	Leonard & Son, A. M.	Nursery Tools	14
American Bulb Co.	Bulbs, Seeds, Etc.	14	Linville Nurseries	Rhododendrons	11
Andrews Nursery Co.	Raspberries	12	Lovett, Lester C.	Privet and Berberis	11
Anthony Lake Nursery	Rhododendrons	11	Maloney Bros. Nursery Co.	General Nursery Stock	13
Bernardin, E. P.	General Nursery Stock	13	McHutchison & Co.	Nursery Supplies	13
Blountville Nurseries	Fruit Trees, Privet	12	Morse Landscape Nursery	Elm Seed	13
Bobbink & Atkins	Evergreens	11	Naperville Nurseries	Lining Out Stock	11
Burr & Co., C. R.	General Nursery Stock	11	National Nurserymen's Credit Bureau, Inc.		15
Campbell-Hausfeld Co.	Sprayers	16	Norton Nurseries, A. L.	Pin Oaks	13
Canterbury Nurseries	Boxwood	11	Peat Import Co.	Peat Moss	16
Chase Bag Co.	Saxolin	15	Pioneer Mfg. Co.	Tractors	16
Chase Co., Benjamin	Nursery Labels	15	Premier Peat Moss Corp.	Peat Moss	16
Clark & Son, W. E.	Grafting Wax	13-15	Princeton Nurseries	General Nursery Stock	11
Des Moines Cement-Art Co.	Cement Stepping Stones	14	Rambo's Wholesale Nursery	Small Fruit Plants	12
Durfey Co., O. F.	Hose Connectors	15	Shunk Mfg. Co.	Duster	16
Evergreen Nursery Co.	Evergreens	11	Shute & Co., E. L.	Peat Moss	16
Felins Tying Machine Co.	Tying Machines	14	South Michigan Nursery	Strawberry Plants	12
Foster Nursery Co.	Grapevines & Small Fruits	12	Storrs & Harrison Co.	General Nursery Stock	9
Gardens of the Blue Ridge, Inc.	Broad-Leaved Evergreens	11	Swedberg Nurseries	Perennials	12
Herbst Bros.	Tree and Shrub Seeds	14	Washington Nurseries	Chinese Elm Seed	13
Highland Park Nurseries	Evergreens	11	Western Maine Forest Nurs.	Evergreens	14
Hill Nursery Co., D.	Evergreen Specialists	11	Westhauser Nurseries	Strawberry Plants	12
Hogansville Nurseries	Peach Pits	12	West Hill Nurseries	Berry Plants	12
Howard Rose Co.	Roses	13	Westminster Nurseries	General Nursery Stock	14
Jackon & Perkins Co.	Novelty Roses	10	Wilson & Co., C. E.	Lining Out Stock	11
			Wohler, A. E.	Japanese Cherries, Crabs	14

AMERICAN NURSERYMAN

[Registered U. S. Patent Office]

The Chief Exponent of the American Nursery Trade

*The Nurseryman's Forte:
To Make America More Beautiful and Fruitful*

Vol. LIX

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No. 6

Peat Moss Aids in Transplanting Trees

**Homer L. Jacobs, of Research Department of Davey Tree Expert Co.,
Describes Successful Tests with Peat Moss in Moving Large Trees**

Commercial large-tree moving presents somewhat different problems from that of planting nursery stock. In the former case the tree is sold on the basis of a top of a certain size and shape. Then, in the process of moving, a large proportion of the root system is destroyed, as happens in most transplanting. With nursery-size stock the top can be reduced in proportion, with benefit to the tree and without seriously affecting the purpose for which it is planted. While in many cases a certain amount of thinning can be done on large trees, serious shortening or cutting out of large limbs involves delivering a tree which is smaller than it was when it was sold.

The immediate problem with the large transplanted tree becomes one of so caring for the tree that it may grow a large number of new feeding roots in a short period of time. Since a tree usually carries over enough food material to make a large part of the season's growth, the most pressing need is for enough water to prevent scorching by the time the leaves are fully expanded and the hot, dry summer days arrive.

This means that our large tree, transplanted during the fall, winter or spring months, should have made substantial progress toward restoring its feeding and water-absorbing roots by the middle of July at the latest.

The Problem.

We can now state the problem in one sentence: What planting medium will encourage the maximum root growth in the minimum of time? Time-honored horticultural usage tells us that topsoil with the possible addition of some well rotted organic material should be used. Can this be improved upon? Not only should it be improved upon, if possible, but in large ornamental plantings, topsoil is often difficult to secure and is sometimes prohibitive in cost. Furthermore, the use of topsoil means that an equal amount of subsoil must be removed from the planting grounds.

Over a period of years, field observations on the use of manures, domestic peats, German peat moss and other organic materials indicate that the peat moss has an especially favorable reaction on root growth.

With this in mind the Davey Tree Expert Co. began experimental work to

determine, if possible, whether or not raw subsoil could be prepared in such a way that it would be at least as favorable to root growth as topsoil.

Study of Root Growth.

Because of the great amount of labor involved in studying root growth, it was necessary to work with small trees. The method used is not new, but so far as the writer is aware, this was the first time it had been used in the study of shade tree planting problems.

Heavy wooden boxes, four feet square and four feet deep, were sunk into the soil until the tops, covered by light-proof lids, were level with the surrounding soil. One side of each box was fitted to take a sheet of quarter-inch polished wire plate glass three feet square. A hole three feet square and three feet deep was then dug to allow for planting the tree just outside the window. This, in effect, makes an observation booth through the side of which one can watch root development against the glass window. This method is a fairly satisfactory way of studying root growth, since one can get some idea not only of the extent of growth, but when it starts and how rapidly the roots of an individual specimen grow.

The cubic-yard holes were filled with the desired soil mixtures and the trees planted in such a way that one or more of the cut root ends almost touched the glass. One and one-half inch caliper, selected nursery-grown sugar maples and American elms were used.

Soils Used.

Of the soils and mixtures used, the following are of particular interest at this time:

First, a heavy, clay subsoil, classified as the Volusia clay loam. This is an extremely sticky soil when wet and in the absence of good drainage and organic material is difficult to manage. The topsoil was discarded and the subsoil used without any improvement.

Second, the same clay subsoil as in No. 1 with peat moss in the proportion of one part peat moss and two parts clay by volume. These were thoroughly mixed and packed in wet.

Third, topsoil of the Wooster loam type. This was in good physical condition and of medium fertility.

The trees were planted on April 29,

and each was given a small quantity of nitrogen fertilizer after planting. All trees were watered equally from time to time throughout the summer.

In less than four weeks after planting, some of the trees showed roots growing against the glass. From the first the roots of the trees planted in clay subsoil and peat moss grew much more rapidly than those planted in topsoil and the growth exceeded greatly the growth made by the trees in untreated subsoil.

Accurate reduced scale drawings of the roots against the glass were made from time to time throughout the summer.

By June 30 roots of an elm planted in subsoil and peat moss had outgrown the width of the glass and had thoroughly explored the soil to a depth of twenty-four inches. By September 19 the entire surface of the glass three feet square was covered with a network of fine feeding roots.

June 30 a typical elm planted in topsoil showed a root growth less than eighteen inches wide and less than ten inches in depth. It was not until about the first of August that the trees planted in topsoil really started vigorous and rapid root extension. Top growth also lagged on these trees.

Street Planting Test.

A somewhat more extensive test along the same line was also made in the same season. Judged by the condition of the tops and the amount of trunk growth, the results have been somewhat the same. Fifty budded Moline elms were planted on a street park strip from which all the topsoil had been removed in grading. This left only the barren gravelly subsoil. The trees were eight to ten feet in height and were uniform specimens.

Holes three feet in diameter and two feet deep were dug for planting. The odd-numbered trees were set in Wooster loam topsoil from an adjoining field. The even-numbered trees were set in this gravelly subsoil to which was added about one-third peat moss by volume. In this way each treatment was applied to twenty-five trees. All trees were given a liberal quantity of high-nitrogen complete fertilizer at the time of planting. All trees were watered equally as needed through the season.

At the end of the season trunk meas-

urements showed fifty-six per cent better trunk growth on the peat-treated trees than those planted in topsoil.

All trees were fertilized in April of the following year. While the roots outgrew the original planting holes the first season, measurements on September 11 of the second season showed that the benefits of the peat extended through the second season. The roots showed thirty-five per cent better growth for the second season on the peat-treated trees than on those planted in topsoil.

These experiments are, of course, too limited both as to numbers of species and individuals to permit of drawing any general conclusions. They do, however, point to the possibility of securing fully as good results from the use of raw subsoil and undecayed peat as can be secured at greater expenditure of time and money with topsoil or other materials.

LOANS FOR GROWERS.

Loans for growers of nursery stock, plants, seeds and bulbs are available through the Production Credit Corporation, which is a part of the Farm Credit Administration. The machinery is set up in the form of state horticultural or fruit growers' production credit associations. The regulations state that to be an eligible applicant, an individual must be a grower or must devote certain time and energy to the active management of growing operations. The enterprise must be conducted so that he reaps the benefits of the operation if it is successful and suffers the loss if it is a failure.

A loan may be used to purchase materials and supplies, pay labor and replace worn-out equipment; to purchase packages; to purchase fertilizers; to cover expenses of spraying, picking, marketing, storage, freight and insurance; to pay debts originally incurred for horticultural purposes.

The security on loans to growers consists of a chattel mortgage on equipment and growing crops. The interest rate at the present time is six per cent per annum. Loans may be made for as long as one year, with renewal privileges if it is considered advantageous to the borrower for the conduct of his business and safe for the association. Each borrower is required to own class B stock in the association equal to \$5 for every \$100 of the loan. Fees for the inspection of the collateral, cost of chattel abstract, expenses of filing or recording the mortgages are to be paid by the borrowers.

In the middle west the loans are handled by the Production Credit Corporation of St. Louis. State organizations have been set up in Arkansas, Illinois and Missouri under this corporation.

SCHEDULE FAIR SHOWS.

An unbroken series of national flower shows at A Century of Progress in Chicago this year was scheduled and approved at a meeting of the Society of American Florists recently. Foremost flower growers of the American continent have promised to send their finest productions to these shows, at which cash prizes and medals will be awarded.

The 1934 horticultural program elevates the display of flowers and gar-

dens to a prominence similar to that which it enjoyed in the 1893 world's fair, when Horticultural hall was one of the outstanding features.

June 1, a rose show will open the program. Roses are already being groomed for this event in the greenhouses of the famous rose growers. This show will last to Friday, June 8. Thereafter during the fair a change of bill will take place each Friday night.

The program as it now stands is as follows:

June 9 to 15—Peonies.
June 16 to 22—Carnations.
June 23 to 29—Annuals and bulbous irises.
June 30 to July 9—Lupines, candytuft and calendulas.
July 7 to 13—Peonies.
July 14 to 20—Zinnias, larkspur and pyrethrum.
July 21 to 27—Gladioli.
July 28 to August 3—Delphiniums.
August 4 to 10—Garden club contest.
August 11 to 17—National gladiolus show.
August 18 to 24—Gladioli.
August 25 to 31—Lilies, phloxes, marigolds and asters.
September 1 to 7—California chrysanthemums.
September 8 to 14—Roses.
September 15 to 21—Dahlias.
September 22 to 28—National dahlia show.
September 29 to October 5—Orchids, gardenias and exotic plants.
October 6 to 12—Carnations.
October 13 to 19—Roses.
October 20 to 31—Annual show of the Illinois State Florists' Association.

Special classes will be provided in all shows for amateur exhibits. Extensive changes are planned in the 4-acre garden area on the lake shore adjoining the Horticultural building.

HARTFORD ROSE GARDEN.

The department of parks at Hartford, Conn., and the American Rose Society announce the completion of the plans for the reopening of the regional rose test garden at Elizabeth park, Hartford. With the cooperation of these two organizations in the testing and judging of roses for garden use in the central New England region, it is hoped that a real service has been instituted.

Applications should be made as soon as possible for entry this spring of varieties not now in commerce but which will be introduced within three years, or varieties which are considered to be of such merit as to warrant trial. Address the rose test garden, department of parks, Municipal building, Hartford, Conn.

Complete records will be kept on each entry as to growth, resistance to disease, tolerance of climatic conditions, quantity of bloom, etc. Accredited judges will make notations in June and in autumn and may make a judgment at the end of two years or reserve decision until the third year. The gold and silver medals of the American Rose Society will be available.

Elizabeth park at Hartford has a wide reputation for its municipal rose garden. More than 200,000 visitors inspect it in the month of June each year. The hundreds of inquiries made as to the new roses and the trends in rose types convince the park officials that the restoration of the trials suspended at the time of the war will be of great value to the rose-growing world.

The success of the venture now rests with the producers and introducers of new varieties in the quantity and quality of the entries sent in. All hybridizers and introducers are invited and urged to submit entries.

G. H. Hollister, Supt.

AMERICAN NURSERYMAN

THE Southern California Nurserymen's Association will stage its annual spring flower show March 23 to 25 at the E. C. Anthony building, Los Angeles, Cal.

WALTER H. HARRISON, of the Amherst Nurseries, Amherst, Mass., is a candidate for a position on the local board of selectmen, running on an independent ticket.

DANIEL A. CLARKE, of the Red Oaks Nurseries, Fiskeville, R. I., is chairman of a committee to arrange for a conference of agriculturists in Rhode Island in 1935.

THE office of Lindley Nurseries, Inc., formerly at Pomona, N. C., is now located at the nurseries, adjoining the municipal airport, on state highway No. 60, Greensboro, N. C.

THE formal opening of the establishment of the Walnut Hill Nursery, Inc., at Forbing, La., took place March 10. Officials of the firm are Walter Ray, L. M. Riggs and E. L. Ray.

CONTRACT for landscaping the grounds for a new post office at Chattanooga, Tenn., has been awarded the Howell Nurseries, Knoxville, Tenn., which will furnish all labor and materials at a cost of \$943.

A NEW landscaping service for small home owners and small farm operators has been established by Armstrong Nurseries, Inc., Ontario, Cal. The firm has issued an attractive booklet describing its services.

P. WELLER, of the Weller Nurseries Co., Holland, Mich., and his wife announce the birth of a son February 27, which was Mrs. Weller's birth anniversary. The baby is the fourth son; there are no daughters.

ADOLF MULLER, of the De Kalb Nurseries, Morristown, Pa., was the principal speaker at a meeting March 5 to sponsor a flower show at Bridgeport, Pa., of the best blooms appearing in Bridgeport flower gardens. Mr. Muller gave hints on the care of gardens.

THE Greenwood Nurseries, Greenwood, R. I., of which H. H. DeWilt is proprietor, have received a contract for the roadside beautification project to be carried out on the Washington highway, through the towns of Smithfield and Lincoln, from the state board of public roads on a bid of \$2,840.06. Nine firms had submitted bids.

MELVIN E. WYANT, Mentor, O., addressed the Dayton Rose Club, Dayton, O., the evening of February 26; the club is believed to be the only men's garden organization in the state. The afternoon of February 26, Mr. Wyant talked informally to a group representing all the garden clubs of Dayton, the meeting being at the Art Institute.

THE Banning Seed & Nursery Co., Brookfield, Mo., has entered its fourteenth year of continuous business and is mailing out a neat and attractive catalogue. T. J. Banning is owner, and the business has steadily grown from a small beginning. A landscape department was recently added to the business and is under the direction of Mr. Banning's son, Charles, formerly connected with the landscape division of the Missouri state highway department.

Key to Evergreen Ilex

L. C. Chadwick Writes on Identification, Cultural Requirements, Propagation and Landscape Use of Hollies

During the past few years considerable interest in the evergreen ilex (holies) has been shown by nurserymen and home owners. As an aid to their identification, cultural requirements, propagation and use in landscape planting this article is prepared.

The evergreen hollies show considerable variation in habit of growth. Dense pyramidal tree forms are characteristic of the American and English hollies, compact upright shrubby forms are exhibited by *Ilex Pernyi* and *I. crenata*, while *I. crenata convexa* and *I. glabra* usually present more rounded forms. The variations in habit of growth lend to the usefulness of these broad-leaved evergreens in landscape planting. Even though the fruiting habit of these plants is their most outstanding characteristic, the nature and attractiveness of the foliage should not be underestimated. With the leaves varying in size and shape, as noted in the photograph reproduced herewith, the glossy, dull or yellowish green color is attractive throughout the year.

The flowers, although comparatively small, are attractive. They are usually dioecious—that is, the male and female flowers are borne on different plants. *Ilex Pernyi*, however, is said to bear both male and female flowers on the same plant, although some small plants have not shown this to be true. A similar flowering habit has been noticed on some plants of *I. opaca*. Since the dioecious habit seems to predominate, both sexes should be planted at reasonable proximity, so that insect pollination will not be impeded.

Fruits.

The red or black fruits of these plants are especially attractive and add greatly to their value as ornamental specimens and for use as cut sprays at Christmas. Yellow-fruited types occur in some of the varieties. The fruit is either borne on the current year's growth or that of the past season, and with some types it remains on the plants for the greater part of the winter. Additional growth characters will be found in the accompanying key of identification or may be obtained by referring to standard botanical books on cultivated plants.

The hardiness of the various hollies has been the subject of much discussion. In the accompanying key symbols are given indicating probable hardiness of the types in Ohio. The same types should prove of equal hardiness in other localities of similar environmental conditions. There is good reason to believe that with careful selection of types and provision of correct cultural conditions the range of hardiness can be extended considerably farther north.

Culture.

The best cultural conditions for these evergreen hollies, although they will vary with the species, can be summed up in the statement that they will do best in a light soil which is retentive

of moisture, although well drained, and fairly fertile and when they are located in cool partially shaded situations. Such locations may be rather difficult to obtain in the nursery, but with some forethought they can be approached. If these hollies are planted in light soil and protected from sweeping winds by established windbreaks, little difficulty should be experienced in the successful production of most of these types. While slightly acid soil is not absolutely essential for many of the species, best results usually follow planting in such a medium.

When young plants of American holly are lined out in the nursery they usually respond with a rather rapid but sprawling growth. Upright leaders frequently are not formed until the fourth to sixth growing season.

The most susceptible period to injury occurs in the spring. The warm early spring days frequently stimulate activity, which is later injured by a fall in temperature. This would point to the fact that the plants should be given somewhat sheltered conditions and preferably northern or eastern exposures.

Planting in light well drained soil will aid proper maturity in the fall and much less winter injury will occur. No fertilizers should be applied after early August.

Transplanting.

Most literature refers to the fact that the leaves should be stripped from trees when they are planted and many of the

limbs cut well back. This practice is not necessary with nursery-grown plants, even with such large-leaved species as the American and English hollies, for which such practice was usually suggested. Such a procedure might have been justifiable when plants were collected and much of the root system was destroyed. Plants are best transplanted balled and burlapped in spring after the soil has warmed sufficiently to allow root growth to start at once. As much of the root system should be retained as possible. If the plants have been properly root-pruned in the nursery, this should be fairly easily accomplished. The plants should be well firmed when planted and a depression left around each one to hold water.

A liberal quantity of peat moss worked into the soil about the plants, as well as used as a mulch, will aid their proper development.

If the soil is of average fertility little additional fertilization will be necessary. An application of a complete fertilizer, such as a 4-12-4, at the rate of one-half pound to plants of specimen size or at the rate of two to two and one-half pounds per hundred square feet of bed area, is sufficient.

Propagation.

The evergreen hollies may be propagated by seeds, grafting and cuttings. Propagation by seeds is a slow and only partially successful method. The best practice appears to be one in which the fall-gathered seeds are



Typical Leaves of Evergreen Ilex, with Inch Rule.

Left to right—Top row: *I. Aquifolium*, *I. Cassine*, *I. cornuta*, *I. fujianensis* and *I. integra*. Bottom row: *I. opaca*, *I. Pernyi*, *I. glabra*, *I. crenata*, *I. crenata microphylla* and *I. crenata convexa*.

cleaned and stored dry until spring. At that time plant them in flats or directly in coldframes. During the first winter they should be protected by placing boards over the frames. The seed bed should be kept moist throughout the germinating period. In the spring remove the covers and replace with half-shades. This summer and winter procedure should be continued for about three seasons. Little germination will occur the first year, approximately fifty per cent the second year and a smaller proportion the third season. Seventy-five per cent germination is as high as can be expected. Seedlings should be transplanted as soon as they have attained sufficient size.

Grafting is frequently practical in the production of varieties or to obtain both male and female flowers on the same plant. Seedling plants of the species are used for the stocks.

From Cuttings.

The American holly has been produced from cuttings in the south for some time, but only recently, due to investigational work conducted by various research institutions, has the practice become common farther north. The best time to take cuttings varies with the species. Good results have been secured with cuttings of *I. opaca* taken in August, of *I. crenata microphylla* and *I. glabra* in December and January. *I. cornuta* roots fairly well when taken at almost any season of the year, especially from July to January. Probably the factor most conducive to the success with cuttings is to keep them in a fresh condition throughout the taking, preparation and rooting periods. For this reason, a mixture of equal parts of sand and peat or peat moss alone makes an ideal medium. Cuttings are best stuck on a slant, so that the lower leaves are just above the medium. Leaves must be retained on the cuttings of evergreen types if they are to root.

The production of American, Chinese and English holly plants from cuttings in this way opens a possible side line for nurserymen. These cuttings, potted, carefully selected for both male and female types and pollinated, will produce small fruiting plants the first season. Such small berried plants should find ready sale by florists during the Christmas season.

Landscape Use.

The evergreen hollies find many uses in landscape planting, being appropriate for foundation planting, hedges, rock gardens, evergreen beds or borders and as specimens. The smaller types, such as *I. glabra*, *I. crenata convexa* and *I. crenata microphylla*, are of use in the foundation planting. All three of these may be employed as clipped specimens or as they naturally develop. *I. crenata convexa* will make fine formal entrance plants. *I. Peryi* and *I. cornuta*, if they are hardy, will be useful where slightly larger specimens are desired.

The common hollies are seldom used for hedge purposes, but *I. crenata convexa* appears to be a promising hedge plant. It is extremely compact, probably will not exceed six feet in height and can be easily restrained by trimming to a much smaller size. The small convex leaves borne profusely on the branches add to its compact habit. In

situations where it proves to be hardy it should replace box, which it resembles, to some degree. Nurserymen will do well to propagate this plant. *I. crenata microphylla* may be used also as a hedge plant.

The smaller forms, such as *I. glabra*, *I. crenata convexa* and *I. crenata microphylla*, give character and add beauty to the rock garden. The excellent habit of growth, attractive foliage and fruits make the hollies especially serviceable for evergreen beds and borders. They may be planted not only in groups, but make attractive specimens as well. Most of the evergreen *ilex* have red fruits. Only *I. glabra* and *I. crenata* and its varieties have black fruits. Advantageously located in the garden, these plants add color throughout the winter. As more attention is given to the selection of hardy varieties the evergreen hollies should enjoy tremendous popularity.

The accompanying key, with the names as given in Bailey's "The Standard Cyclopedia of Horticulture," is presented as an aid to the identification of the most important evergreen hollies that may be possibly grown in the north. Identification is mostly by leaf characters.

KEY TO EVERGREEN ILEX.

The *ilex* (hollies) are evergreen or deciduous shrubs or trees with entire, serrate or spiny-toothed leaves. Buds are small, ovoid, with about three outer scales. The flowers are usually dioecious (i.e., staminate and pistillate on different plants), although polygamous (bearing both unisexual and bisexual flowers on the same plant) conditions are known.

The following species and varieties are included in this key:

Aquifolium, English holly.
Cassine, dahoon.
cornuta, Chinese holly.
crenata, Japanese holly.
crenata convexa.
crenata microphylla, little-leaved Japanese holly.
Fargesii.
fujanensis.
glabra, inkberry.
integra.
opaca, American holly.
pedunculosa, longstalk holly.
Peryi, Pery holly.
Sugerokii.

The lettered symbols following the plant names denote probable hardiness: H, hardy in Ohio except in most exposed places; HT, doubtfully hardy unless given some protection; T, tender except in southern part of state; TT, tender.

1. Leaves with spiny usually coarse teeth, occasionally entire with spiny apex. (*Ilex Aquifolium*, *cornuta*, *opaca* and *Peryi*.)
2. Leaves small, one-half to one and one-quarter inches (1.5 to three centimeters), crowded, glabrous and dark, glossy green above. Spines are one to three on each side, with the upper pair usually the largest but shorter than the terminal spine. Fruits red. August, clustered close to the twig. Unlike most hollies, as it is said to bear both male and female flowers on the same plant, so that every plant may be expected to fruit. A compact ornamental plant of ten feet or more.

Ilex Peryi, Pery holly. T.

2. Leaves larger, one and one-quarter to four inches (three to ten centimeters) long.
3. Leaves rectangular-oblong and 3-pointed at apex. Leaves dark, lustrous green above and with one to three spines on each side of leaf at the base. Fruits large, red. September. A striking ornamental to ten feet or more, with large fruits and handsome odd-shaped leaves.

Ilex cornuta, Chinese holly. T or TT.

3. Leaves elliptic, oblong-ovate to lanceolate, not rectangular.

4. Leaves dull green above, yellowish green beneath with spiny teeth, rarely entire. Young branches finely hairy. Fruits red, usually solitary on young twigs. October. A tree to fifty feet or more, usually forming a narrow pyramidal head.

Ilex opaca, American holly. H.

4. Leaves glossy green above, light green beneath, with wavy margins and large triangular teeth, occasionally entire. Flowers white, fragrant. Fruits large, bright red, usually clustered on the past year's growth. September. A tree to fifty, occasionally seventy-five feet, forming a dense pyramidal head.

Ilex Aquifolium, English holly. T or TT.

1. Leaves serrate, crenate or entire. (*Ilex Cassine*, *crenata*, *crenata convexa*, *crenata microphylla*, *Fargesii*, *fujanensis*, *glabra*, *integra*, *pedunculosa* and *Sugerokii*.)

5. Leaves usually more than two inches (five centimeters) long. (*Ilex Cassine*, *Fargesii*, *fujanensis* and *integra*.)

6. Leaves at the apex contracted into a short obtuse point, wedge-shaped at the base, entire or rarely with a few teeth, dark glossy green above. Fruit large red and showy. August to September. Tree to forty feet or more. Variety *leucocladia* (H) has yellow branchlets, longer leaves, less contracted tips and should be hardy in most parts of Ohio.

Ilex integra. TT.

6. Leaves sharp-pointed or obtuse, not contracted at tip.

7. Leaves obtuse, occasionally acute at the tip, pubescent below, at least when young, usually entire, occasionally toothed above the middle, obovate to oblong-linear. Fruits small and red. Ornamental plant to thirty feet.

Ilex Cassine, dahoon. HT.

7. Leaves sharp and usually taper-pointed at the tip.

8. Leaves long and narrow, long-pointed at tip and wedge-shaped at the base, slightly toothed above the middle, dull green above. Fruits red, usually clustered. September-October. An ornamental plant to twenty feet or more, with a somewhat straggly open growth.

Ilex Fargesii. TT.

8. Leaves sharp-pointed, wavy-margined, slightly toothed, rounded at the base and glossy green above. Fruits red on long stems. A tree to twenty feet.

Ilex fujanensis. HT or T.

5. Leaves usually less than two inches (five centimeters) long. (*Ilex crenata*, *crenata convexa*, *crenata microphylla*, *glabra*, *pedunculosa* and *Sugerokii*.)

9. Young branchlets glabrous. Leaves occasionally more than two inches long, rounded or broad wedge-shaped at the base, entire and lustrous green above. Fruits red, solitary or slightly clustered on long stems, October. Ornamental plant to thirty-five feet.

Ilex pedunculosa, longstalk holly. H.

9. Young branchlets hairy.

10. Leaves toothed only above the middle.
11. Leaves obovate to oblanceolate, dark, lustrous green above. Fruits black. September. An ornamental shrub to eight feet of compact habit of growth.

Ilex glabra, inkberry. H.

11. Leaves elliptic, acute at the tip and wedge-shaped at the base. Fruits red, solitary. September. A dense shrub to six feet in height.

Ilex Sugerokii. H or HT.

10. Leaves completely toothed, but more pronounced above the middle, lower teeth greatly reduced, black.
12. Leaves decidedly convex, small and compact. Fruits black, October. A striking ornamental shrub that should make a fine hedge plant or clipped specimen. (This plant has been listed as *Ilex crenata bullata*, *nummularia* and *Marshallii*.)

Ilex crenata convexa. H or HT.

12. Leaves not decidedly convex.
13. Leaves mostly more than three-quarters inch (two centimeters) long, wedge-shaped at the base, glossy, dark green above. Fruits black, October. A compactly branched shrub to twenty feet or more.

Ilex crenata, Japanese holly. HT.

13. Leaves mostly less than three-quarters inch (two centimeters) long, not strikingly wedge-shaped at the base, glossy dark green above. Fruits black, October. A somewhat smaller but hardier plant than the species.

Ilex crenata microphylla, little-leaved Japanese holly. H or HT.

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The Open Price Plan

P. J. van Melle, Secretary of the Allied Retail Nurserymen's Associations, Presents the Smaller Retailer's Viewpoint

It appears to me that the reaction to the open price plan in the trade papers has been, thus far, more in the nature of a counting of noses—for and against—than of analytical study. We read of associations' approving and disapproving, and so seldom of particular grounds for such action.

Should not this important proposition be discussed above all from the technical, analytical viewpoint? Should not every motive and notion yield to this practical question: What are the probable effects upon particular divisions of the industry and upon the industry as a whole? How can the trade approve or disapprove intelligently, unless there is a pretty general comparison of arguments, pro and con?

I wish that we might have more reasoned expressions from the several divisions of the industry. Out of them might come an intelligent evaluation of the desirability of the proposed plan.

To that end, then, I venture to express my views of the probable effects upon the smaller retail nursery establishment. Considering that there are many such and that it is the express wish of the administration that their interests shall be protected, I think that my remarks may not be considered unpatriotic. If I should prove misinformed in any particular, I hope that I may be enlightened.

Approve in General.

I approve heartily of a general policy of published prices and compelled adherence to them. But that does not prevent me from desiring to see this particular open price plan adapted to existing, peculiar conditions, and especially to the welfare of the smaller retail enterprise, nor from opposing it as a whole, if, in effect, it would tend to place unequal hardship upon the latter.

This plan, as a part of the marketing agreement, would not be binding upon stores, roadstands or peddlers. Thus, under it, retail nurserymen, selling at their nurseries, would be required to sell at published and inflexible prices, while other merchandisers, in the same communities, would be exempt from that regulation and free to shade their margin of profit to suit current competition. Does that, or does it not, constitute unequal and unfair competition to retail nurserymen?

The store or roadstand, having ascertained that the lowest local retail nurseryman's price for a certain item is \$1, would advertise that fact and sell the same thing at from 65 to 95 cents.

Be the open price idea ever so good, if this plan cannot be made binding in an equal manner upon all who sell nursery stock and discriminates, in practice, against the legitimate retail nurseryman, in favor of his competitors who sell the products of large growers, I, for one retail nurseryman, hope that it may be prevented from going into effect.

There are other things.

There is one thing more desirable than open prices: It is fair, orderly

prices. Open prices tend to stabilize prices at existing general levels. If these levels are fair and satisfactory, stabilization so effected will be beneficial. If existing levels be unfair and intolerable to any one division of the industry, stabilization at approximately those levels may force that division to the wall. That is the case in our industry. Existing price levels are without any basis of order.

The only discernible price policy in late years has been one of crowding the retail nurseryman out of the so-called large-consumer market; of making available, to one class of buyers after the other, special discounts, at which the smaller enterprise cannot sell its own products or resell at a profit. A series of such discounts was sanctioned by the American Association of Nurserymen and is greatly exceeded by individual large concerns. As the culmination of this policy, today every large consumer or potential large consumer can obtain from the large growers resale rates or better.

This condition jeopardizes the existence of the smaller retail enterprise. It cannot exist without fair opportunity to compete for this type of business. In order to exist at all today, the retail grower is forced to meet resale rates in the consumer market and to sell off his stocks at distress prices.

The average retail establishment cannot survive in price competition with wholesale growers. It uses higher-priced land, it pays higher wages, employs a more skilled type of help and its selling and service costs are higher. These costs cannot be reduced to those of the wholesale grower, nor are they separable or chargeable over and above the net price of stock. Nor are these higher costs due to comparative inefficiency.

Effect of Open Price Plan.

Now this is the probable effect of the open price-plan upon this condition: Wholesalers who have not heretofore issued consumer prices will do so—at a level only nominally in excess of resale rates. With these prices they will set out, not to serve the general public, but only the large consumer.

Other large growers, now operating both at resale and at consumers' prices, well differentiated, unwilling to cede this market to the wholesalers, will compete for it, also, with nominal consumer prices. Being allowed to publish only one consumer price, they will choose to abandon the higher consumer level hitherto maintained. The smaller retail man, forced to publish prices at which he can operate at a profit, will no longer be allowed occasional special quotations to large consumers. He will be definitely, finally shut out from the larger consumer market, and he will be continually harassed by the availability, to all his more important customers, of prices only nominally in excess of resale rates.

These effects will be ruinous to the smaller retail establishment. They

will, I estimate, cause a grand wiping out of existence of smaller enterprises.

This plan, as it stands, without modifications or additional provisions, will do the following things, in direct violation of the purposes of the A. A. A.:

1. Concentrate the largest part of the consumer market upon the large growers.

2. Lower consumer prices beyond the ability of the smaller retail grower to compete.

3. Drive the smaller, retail enterprise out of business.

4. Deprive the public of an indispensable type of horticultural service, now rendered only by retail nurserymen.

5. Reduce employment and lower wages.

The advantages of this plan are entirely on the side of the large grower and away from the smaller retail enterprise.

Protecting Clause.

The only thing for retail nurserymen to do about it is either to oppose this plan as it stands or bend every possible effort to combine it with a protecting clause to the effect that nurserymen publishing both consumer and resale prices shall base their resale prices on a trade discount of not less than thirty-three and one-third per cent off consumer prices.

Such a provision would come as near as possible to establishing a golden rule. A wholesaler, tempted to set low consumer prices, such as would hurt the smaller enterprise, would penalize himself by obligating himself to sell to the trade and to department stores at a price so low that it would hurt him.

This, then, is my reaction to the plan, from the viewpoint of the small enterprise: A protective provision such as the foregoing is absolutely necessary. Also, the plan must be made binding in a like manner, without discrimination, not only upon the small nurseryman, but upon his competitors—upon stores, peddlers and roadstands as well.

Without these two stipulations, I should be heartily opposed to putting this plan into effect and I would urge my fellow retail nurserymen to bend every possible effort to oppose it. I would urge them to communicate with their code authorities in the matter and to place themselves on file, singly and in organized groups, with the agricultural adjustment administration. Such representations, made on behalf of the smaller enterprise in our farm industry, are sure of a sympathetic reception on the part of the administration, and the arguments here presented from that viewpoint, I feel, would not be dealt with lightly by the administration.

And yet I believe in open price and adherence to the same. Only, such a policy must be carefully shaped so as not to hurt the small enterprise.

The consumer's dollars go to the enterprise that, in his opinion, best serves his needs and his interests.

State Association News

RHODE ISLAND MEETING.

Marketing agreements, codes of fair competition, damage by rabbits and proposed legislation to do away with all federal plant quarantines were discussed at the annual meeting of the Rhode Island Nurserymen's Association at the Providence-Biltmore hotel, Providence, February 26. The debate on rabbit damage resulted in the association's going on record as opposed to the liberation of any more cottontail rabbits by the state game commission, on the ground that they work serious damage to trees as well as farm crops, and favoring an immediate open season on rabbits as a means of exterminating the several thousand which the game commission has already set free in various sections of the state.

National legislation to do away with federal plant quarantines was also opposed on the ground that, with no federal regulations, states would be at liberty to impose quarantines themselves, some of which would be so exacting that they would hamper interstate commerce in nursery stock to the detriment of the nursery business in Rhode Island.

After nearly two hours of discussion of the marketing agreement and supplementary code of fair competition submitted by the nurserymen's National Planning Committee, the subject was dropped without action. Further consideration until something definite and authoritative has been received from Washington was declared a waste of time.

The following officers were reelected for the ensuing year: President, Charles H. Groaton, Providence; vice-president, Henri H. de Wildt, Greenwood; secretary, V. J. Vanicek, Newport; treasurer, William A. Hollingsworth, Edgewood, Providence. The speakers included the state commissioner of agriculture, Harry R. Lewis; President Raymond G. Bressler of the Rhode Island State College, Kingston; Prof. A. E. Stene, and Harry Horovitz, field superintendent of the entomological department of the state department of agriculture.

Commissioner Lewis spoke briefly on the advantages to Rhode Island nurserymen of having federal plant quarantine regulations remain in force; Professor Stene and Mr. Horovitz, on the work of the entomological department in the suppression of insect pests, especially the gypsy moth. C. W. Briggs, manager of the credit bureau of the Providence chamber of commerce, explained the working of that bureau, telling the nurserymen that if they did not ascertain the "paying habits of their customers before they delivered their goods or did the work, it was their own fault if they 'got stuck.'"

MICHIGAN SECRETARY.

Ralph I. Coryell, who was elected secretary-treasurer of the Michigan Association of Nurserymen at its meeting last month, felt obliged to decline the office on account of the pressure of business. So James P. Goodhue, of I. E. Ilgenfritz' Sons Co., Monroe, has been appointed to the office in his place.

ELECT AT MARYLAND COURSE.

Although inclement weather curtailed attendance at the short course for nurserymen at the University of Maryland, College Park, Md., last month, the course was one of the most interesting of the series. About forty were present. A meeting of the Maryland Nurserymen's Association was held one evening during the course.

"Plants as Decorative Objects" was the subject of an illustrated talk by Prof. F. A. Schreper, of the University of Pennsylvania. Another illustrated talk was made by Harlan P. Kelsey, East Boxford, Mass., on the newer and better forms of plant materials. New and old varieties of perennials were described by Alex Cumming, Bristol, Conn.

Members of the staff at the University of Maryland discussed diseases and insect pests and methods of control, illustrating their talks with lantern slides. Russell Harmon, Stroudsburg, Pa., talked on native plant materials.

Prof. R. W. Curtiss, of Cornell University, Ithaca, N. Y., provided two of the most important features of the course. He discussed "Identification of Broad-leaved Evergreens" and gave an illustrated talk on the "Proper Use of Peculiar Plants." In addition to photographs and slides, Professor Curtiss had a quantity of plant material on hand, all properly labeled, supplied by the Le-Mac Nurseries, Hampton, Va., and Julian J. Chisolm, Inc., Garrett Park, Md.

At noon of the second day a special luncheon was held at which the speakers were Dr. Symons, Professor Curtiss and Harlan P. Kelsey. Mr. Kelsey told of his attendance at the hearing at Washington regarding the transfer of the United States Botanic Garden.

The meeting of the Maryland Nurserymen's Association was held the evening of the second day of the course. It started with dinner and was attended by about forty. Jesse P. King, president of the association, presided. The executive committee recommended that the associate membership dues be reduced to \$5 per year and that a new class of membership be included for employees of nursery establishments with dues of \$2.50 per year.

Steps to be taken to curb the peddling of nursery-grown and collected plant material from door to door were discussed. Nurserymen having nursery-grown native material (not collected stock) were requested to send their price lists to Mrs. Andrew Simon, York road, Towson, Md. An address by Dr. Symons closed the session.

Officers elected at the meeting are: President, Jesse P. King, of the Ridgeville Nurseries, Inc.; vice-president, Elliott Wheeler of Canterbury Nurseries, Inc., Easton, and secretary-treasurer, Julian J. Chisolm, Garrett Park.

SOUTH CALIFORNIANS ELECT.

Ray Page, of the Beverly Hills Nurseries, Los Angeles, Cal., was recently elected president of the Southern California Nurserymen's Association, succeeding A. Marks, of the Germain Seed & Plant Co., Los Angeles. A. Pastor,

AMERICAN NURSERYMAN

Inglewood, was chosen vice-president.

George C. Groenewegen, of the botanical gardens of the University of California, Berkeley, addressed the meeting, as did Peter Barnhart; the latter talked on rare specimens. Members were urged to attend the western shade tree conference at Santa Monica April 12.

CHICAGO LANDSCAPE GROUP.

Robert E. Moore, Jr., landscape architect for the south park commissioners, was elected president of the newly formed Society of Landscape Architects of Chicago, which held its first meeting March 7. Wayne H. Laverly, landscape architect for the University of Chicago, was made vice-president. Miss May E. McAdams, landscape architect of Lake Forest and former associate professor of design at the University of Illinois, is secretary-treasurer.

J. Roy West, landscape architect and senior member of the firm of Simonds, West & Blair, was elected chairman of the board of directors. Others on the board are Kenneth W. Bangs, Arlington Heights; Mrs. Gertrude Deimel, Winnetka, and Lowell Kammerer, landscape architect at the Morton arboretum. There are twenty charter members. A regular meeting will be held on the first Wednesday of every month.

PROTEST RELEASE OF RABBITS.

Nurserymen of Rhode Island, especially those of Newport county, are making a vigorous protest against the liberation of several thousand Missouri rabbits by the state game commission in various parts of the state. The protest is on the ground that the releasing of rabbits is detrimental to the farming, horticultural and nursery business. Resolutions of protest have already been adopted by the Newport chamber of commerce and the eastern Rhode Island farm bureau, the latter pointing out that the nursery industry in Newport county is of a larger proportion than in any other similar-size area in the United States.

ILLINOIS REFOREST SURVEY.

More than three million acres of Illinois land, largely unsuited for farming and not yet seriously eroded, have been found suitable for reforestation in the course of a state-wide survey being conducted by a state planning commission.

This land is scattered over the state and might well be utilized for reforestation through a joint arrangement between the federal government, the state and individual farmers, in the view of Col. H. L. Kellogg, state planning engineer in charge of the commission.

Under the state planning board set up by Governor Horner, to operate with the national planning board of the federal public works administration, forty men are going over the state to survey and tabulate existing resources as well as the potentialities. Robert Kingery, director of public works at Springfield, is chairman of the commission of ten appointees.

The development of a systematic plan of reforestation in Illinois is the object of but one of the surveys now under way. This survey already has indicated that the state's failure to reforest waste

lands of little value for farming will bring Illinois face to face with practically entire depletion of its woodlands in another twenty-five years.

"Unless planned efforts are made to equalize more nearly the production and consumption of timber," declares Engineer Kellogg, "this depletion is but a short distance away. Data compiled in our forestry division show that there are only about three million forested acres left with a timber stand of less than three and a half billion board feet.

"If two million acres of new timber were added to the three million now available, the potential yield of hardwood alone would be a billion board feet, or 125,000,000 feet more than the state's domestic requirements."

Since ninety-three per cent of the present forested land is owned by farmers, says Engineer Kellogg, it would seem that the best reforestation campaign could be made by either or all of three agencies: Federal or state bureaus and farmers.

B. Y. MORRISON PROMOTED.

B. Y. Morrison has been promoted to head the plant introduction activities of the bureau of plant industry, United States Department of Agriculture. Mr. Morrison succeeds Knowles A. Ryerson, who became chief of the bureau January 1, 1934.

Entering the Department of Agriculture in 1919, Mr. Morrison has since then been engaged in horticultural investigations, principally in the field of ornamental plants. For the past six years he has been assistant chief of the divisions of plant introduction, in charge of its introduction gardens and of its ornamental foreign projects. He has traveled in the orient and in Europe in connection with plant investigations. As an iris and daffodil breeder, he is one of the outstanding specialists of this country; he has also made important contributions on the barberry and other plant groups.

Mr. Morrison will devote particular attention to introducing and testing foreign and domestic plants which control erosion. These will be tested at several plant nurseries operated in cooperation with the several agencies now engaged in investigating erosion.

OBITUARY.

Augustus Lamar Ligon.

Augustus Lamar Ligon, for years superintendent and general manager of Griffing's Nurseries, Glen St. Mary, Fla., died there suddenly February 28.

Mr. Ligon, who was 51 years old, was a native of Augusta, Ga., but had lived at Jacksonville, Fla., for many years. He is survived by his widow, Bessie; a daughter, Miss Mary Jo; a sister, and a brother.

Otto Katzenstein.

Otto Katzenstein, widely known landscape architect and seedsman of Atlanta, Ga., died Wednesday night, February 28, at a private hospital there. He was 65 years of age. Mr. Katzenstein was a native of Germany. He went to Atlanta in 1903, after living in Boston, Mass., for a number of years.

Mr. Katzenstein went south as the representative of Almstead Bros., Bos-

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ton, to develop Pinehurst, N. C. He then went to Atlanta and laid out Druid Hills for the late Joel Hurt's Kirkwood Land Co. During his residence in Atlanta, Mr. Katzenstein became nationally known as a seed expert. He exported and imported all varieties of seeds and was also successful in building up a widespread business in landscaping.

Surviving are his widow; a daughter, Mrs. Marie Rasche; a son, Jack Katzenstein; a sister, Mrs. Anna Hoffa, Hanover, Germany, and four grandchildren. E. S. L.

COLD WEATHER KILLED TREES.

In regions of lowest temperatures this winter, entire trees of tender fruits have been killed outright, according to Profs. L. H. MacDaniels and A. J. Heinicke, of the department of pomology at Cornell University, Ithaca, N. Y. In more favored areas, they add, fruit buds alone may have been killed or slight damage to spurs and wood may have occurred. Though many trees have been seriously injured, they point out, the amount of injury varies.

"It is impossible to assign definite killing temperatures to the different kinds of fruit trees," they say, "be-

cause they vary with such factors as age and vigor of the tree, maturity of growth last autumn and the size of the crop borne.

"In general, a temperature of 10 to 12 degrees below zero will injure peach buds considerably. At successively lower marks injury may occur on sweet cherries, peach wood, pears, quinces, plums and sour cherries in about the order named. Near 25 degrees below zero, Baldwin apples and even the more hardy fruits may be damaged.

"It is quite impossible to estimate accurately the amount of damage done to different fruits at the present time. Extravagant and inaccurate statements of the amount of killing have found their way into the press. State experiment stations are now studying the amount of damage done, and more information will be given out as soon as it is available. For the present, growers should not prune injured trees heavily and should plan for normal cultural practices to encourage new leaf growth when it appears in every way."

BETTER crops bring better prices. A comparatively small sum invested in plant foods—wisely used—will produce blooms that bring decidedly better prices.

Better Rock Plants

Sixteen Newer Varieties Described

Sixteen rock garden plants recently introduced or worth development were described in the talk on "The Characteristics, Production and Uses of the Better Rock Plants," given by Belden C. Saur, of the Rocknoll Nursery, Foster, O., at the recent nurserymen's short course at Ohio State University.

Rock plants and alpine plants are two distinct types of plants. The alpine plants are not suitable for growth in rock gardens because of the nature of the conditions under which they grow in nature.

Rock plants are also quite variable in their characteristics. In choosing the better rock plants, the following factors were considered: Garden merit, ease of culture and hardiness.

In considering those rock plants which might do well in Ohio it is necessary to study the biological factors in Ohio first. Primarily, Ohio is a heavily wooded area. The plants have to compete with trees for light and moisture. Plants growing in such areas on the forest floor are not suitable for rock gardens, but may be grown in wild gardens.

There are also the dry prairie area and the oak openings. Both of these contribute somewhat to our rock gardens. There are, in addition, small areas of rocky nature. The areas in which plants grow naturally must be considered in selecting plants for a rock garden.

The usual rock garden in Ohio is subjected to strong sunlight in the summer, to warm rains, to freezing and thawing, to extreme variations in temperature, which are as high as 50 degrees during the day's twenty-four hours in winter. The spring brings heavy rains and long spells of wet weather. These have to be considered if we are going to search the different countries for rock plants. Only those countries where the ecological factors are similar will yield plants of value for our gardens. Many of our rock plants are natives of Europe. Probably, in seeking new plants, we should go to South America or Siberia or perhaps seek further here in the United States for new and better rock plants.

The following list contains plants which have been recently introduced or which have such characteristics as to warrant their development as rock garden plants:

Actinea herbacea, Lakeside daisy, a native of Ohio; bears yellow, daisy-like flowers; grows eight to ten inches high; blooms April to June; propagated by division and by root cuttings.

Actinea stenophylla, a plant from the Ozarks; grows six inches high, has daisy-like flowers and prefers a dry place in the sun; blooms all summer; propagated by division.

Allium stellatum, another native of the Ozarks; bears pink flowers twelve inches high during July and August; prefers full sun; grown from seed.

Campanula garganica, an old favorite which deserves more attention; very hardy; grows five inches high; does well when grown on a wall; a native of Europe; easily propagated from stem cuttings taken in the winter.

Coreopsis auriculata, native to Ohio and Kentucky; grows eight inches high; slow-growing, not weedy; bears orange flowers during entire season; very desirable.

Cheilanthes tomentosa, a native fern: will grow and thrive on rocks exposed to the sun; evergreen; five inches high; native of Kentucky; will propagate by division.

Ephedra distachya, an evergreen from Siberia; grows eight inches high; resembles horsetails (*equisetum*); a dwarf shrubby plant, which gives a weird effect in the garden; fifteen inches high; bears red berries in the fall.

Iris arenaria, yellow flowers eight inches tall; blooms in early spring; foliage grassy; prefers sandy soil; very floriferous; one 8-inch clump produced 245 flowers.

Lithospermum canescens, blooms in spring, ten inches high; flowers orange; this plant may be propagated from seed or from root divisions; prefers a very dry place in the sun.

Phlox glaberrima, grows twelve to fifteen inches high; flowers are rosy pink and bloom in early May or June; likes full sun, but will grow in partial shade; may be propagated from cuttings or by division.

Pulmonaria rubra, has very coarse leaves in a basal rosette; flowers are dull red and open very early in the spring; propagated from seed.

Silene pennsylvanica, native of eastern United States; grows six inches high and blooms in May and June; leaves are in a basal rosette, which is surmounted by about 100 flowers the size of a dime; should be propagated every two years for best results.

Talinum calycinum, two o'clock; flowers resemble portulaca; open about 2 o'clock in the afternoon; color magenta; flowers borne on wiry stems eight inches above plant; blooms all summer; reseeds itself readily; a native plant from the Ozarks.

Trielytis hirta, flowers pink and white, resembling an orchid, and borne on stems twelve to eighteen inches high during August and September; very hardy; requires some shade.

Verbena canadensis, a plant which may spread very rapidly; flowers pink and lavender; a white form has recently been developed, but is not on the market yet; thrives on poor treatment; a native of the eastern United States.

Viola pedata and *V. pedata bicolor*, bird's-foot violet; ordinarily a plant which likes an acid soil, but there is one variety or strain from the Ozark mountains which is tolerant to lime;

flowers soft blue; variety bicolor has a soft blue flower with a purple marking; grows but two and one-half to three inches high and blooms during the spring and fall; propagated by division and root cuttings.

As a concluding statement, Mr. Saur stated his belief that the nurserymen of the central states should devise a new system and a new literature stressing those plants which do well and are adapted to conditions in this region. He advised this in preference to copying European methods and introductions, largely unsuited for our gardens.

WORTH-WHILE PERENNIALS.

Each year there is a constant demand for plants which are new, especially desirable or unusual. A few plants which are promising include the following:

Helenium Moerheimii Beauty is a great advance over *Riverton Gem* and other colored forms and has much larger flowers. Hybrids of *Rudbeckia hirta* come in bronze, crimson, pink and other new colors.

Asters are an important hardy family. *Frikartii* blooms in July and August, with medium blue flowers two to three inches across, which are grand for cutting. *Skylands Queen* has lavender blue flowers, equally large as those of *Frikartii*, and is of stocky habit, not exceeding thirty inches in height; it is a September bloomer. *Snowdrift* is an excellent double white. *Hybridus luteus*, as it becomes better known, grows in favor; the variety has heads of small light yellow flowers mainly in July and August and is never more than twenty-four inches high. *King George* remains an excellent variety, rather dwarf, with large blue flowers in midsummer.

Liatris scariosa alba is a good pure white form of an interesting late summer-blooming plant. *Innocence* is a much dwarfer form of the Korean daisy than the original type. The new hybrid coreanum *chrysanthemums* are extra-fine and likely to be perfectly hardy, with flowers of red, bronze, pink and other new colors in September and October. *Amelia*, Mrs. Phil Page, *Yellow Page*, *Granny Scoville* and *Cavalier* are *chrysanthemums* of outstanding merit, some new, others not too well known. *Early Bronze* is unbeatable in its color early in September.

Gibson's *Orange* and the *Gartref* strains of Iceland poppies are extra-fine, while *Olympia*, the double scarlet oriental (the first double one), is exceedingly fine. There are some good new *trollius* varieties, an ever-popular family. Of these, *Orange Princess*, *Ledebouri Golden Queen* and *Empire Day* are great acquisitions. *Thalictrum dipterocarpum album* is a lovely pure white form, and the variety, mag-

!NOVELTY ROSES!

GOLDEN CLIMBER
COUNTESS VANDAL

Leaders for
1933-34

BLAZE
MARY HART
SOUVENIR

Popularized by National Advertising

Ask for new Price List

JACKSON & PERKINS COMPANY, NEWARK, NEW YORK STATE

NATIVE
Broad-Leaved Evergreens
FOR SPRING SHIPMENT

We can furnish Nursery-grown and Collected
Rhododendrons Azaleas
Kalmias, Pieris Lilies
Orchids Aquatics
Ground Covers Vines

Our Wholesale Trade List is ready; if your copy has not arrived, please advise us.

Native Plant Material can be furnished in quantity and on short notice. Let us figure on your requirements.

Gardens of the Blue Ridge, Inc.
E. C. Robbins, Pres.
ASHFORD, NORTH CAROLINA

TAXUS CUSPIDATA CAPITATA
THE ONLY HARDY UPRIGHT YEW
Should supersede Arbor-vitam for hedge purposes

AZALEAS (Evergreen and Deciduous)
MAGNOLIAS Large Flowering
RHODODENDRON HYBRIDS
and other scarce items.

Send us your list of requirements with full particulars as to quantities, varieties and sizes.

BOBBINK & ATKINS
Rutherford, N. J.

C. R. BURR & CO., INC.
MANCHESTER, CONN.

HEAVY SURPLUS ON SOME ITEMS
Write for Low Prices

Princeton Nurseries
of PRINCETON, N. J.
SUPERIOR
Hardy Ornamentals

RHODODENDRONS

Azaleas Hemlock
Kalmias Leucothoe

Nursery Grown and Collected

ANTHONY LAKE NURSERY
PINEOLA, N. C.

RHODODENDRONS

Kalmias and Azaleas
Fine nursery grown and collected plants.
Various sizes in any quantity.

LINVILLE NURSERIES

Elevation 4000 feet.

Linville, North Carolina
Address: **L. A. & P. J. A. BERCKMANS**
Catalogue upon request. Augusta, Georgia

EVERGREENS

Large assortment of evergreens for landscape purposes. Pines, Spruces, Firs, Junipers, Arbor-Vitae. Up to ten feet. Write for prices on small quantities or carload lots.

HIGHLAND PARK NURSERIES
Box 433, Sterling, Ill.

nificum, is a glorified form, with larger flowers than the type.

In phloxes, Daily Sketch, Rokoko and Camillo Schneider are all great advances, and Anemone hupehensis splendens is a marked advance on the original variety.

W. N. Craig.

NEW OR UNUSUAL ROCK PLANTS.

Each year customers are looking for something uncommon in rock plants, so here are a few worth-while varieties: *Dianthus caesus*, Millard's variety, is a greatly improved form, more compact and better in color than the type. *Viola Royal Gem* is a much glorified Jersey Gem, with flowers thrice the size, which bloom persistently and later than the type. *Viola Arkwright Ruby* is ruby-red in color and a real gem. It comes true from seeds; in fact, they are really the only means of increase, as cuttings fail to root. *Viola Moseley's Perfection* is a fine yellow.

Heucheras Pluie de Feu and *Petworth* are excellent varieties, and *micrantha* is a dwarf alpine form. The *heucheras* are easily grown from seeds, but divisions offer the only means to have them come true. *Primula Wanda* is bright in color, almost red. *P. Julie* is a charming blue. All *primulas* like shade in America, although many stand full sun abroad. Among the *gentians*, *Hascombensis*, *sino-ornata* and *septemfida* are a choice trio to add to *acaulis*. *Anemone Pulsatilla* is well known, but the dwarf and equally lovely *A. vernalis*, an early alpine, is less common but easy of culture.

Helianthemum Fireball is a fully double scarlet rock rose, better than Mrs. Earl. *Lithospermum Heavenly Blue* is one of the loveliest blue flowers; it requires better protection in winter than many other rock plants, but is well worth the extra effort.

In a rockery of fair size, some of the *trilliums* are permissible, and it is well to give them a fairly moist location; they do not resent some shade. The variety *Empire Day* is not tall-growing and is of a charming orange color. *T. Ledebouri Golden Queen* grows rather tall for the rock garden, but is a grand plant for the hardy border. *Aster acris nanus* is a useful addition, while the double pink and white forms of *Tunica Saxifraga* are desirable additions.

Seedlings or cuttings of rock plants are better handled in pots than in flats. Flats, however, are more economical for some of the easily grown kinds to be planted out and not sold. A meeting to form an American Rock Garden Society, March 21, in New York is timely. There are some who class this form of gardening as a fad, but interest in it is spreading by leaps and bounds.

W. N. Craig.

TO PLANT 35,000,000 TREES.

Preparations were undertaken by the conservation department of New York state to supply 35,000,000 trees for private reforestation in 1934—almost 10,000,000 more than the number planted last year. Conservation Commissioner Lithgow Osborne revealed that the department has received 900 orders for 3,000,000 trees thus far this year.

PREPARE to provide the needs of your customers for garden supplies this spring.

**Curtailed Production
Adverse Weather
Increased Demand**

all have helped to
create a very

**ACUTE SHORTAGE of
LINING-OUT STOCK**

We have no surplus. Some varieties are now sold up. If you need any stock this Spring to complete your plantings—you should order now.

All unsold stock listed in circular 342; send for it now.

NAPERVILLE NURSERIES

DuPage County
NAPERVILLE, ILLINOIS

HILL'S EVERGREENS

Complete assortment of lining out sizes. Also larger grades for landscaping. Send for our wholesale catalogue.

D. HILL NURSERY CO.
EVERGREEN SPECIALISTS
Largest Growers in America
Box 402 DUNDEE, ILLINOIS

PRIVET and BERBERIS
Splendid Stock

Write for Special Quotations
LESTER C. LOVETT

Milford Delaware

Canterbury Boxwood

Buxus suffruticosa and *B. sempervirens*. Selected uniform plants; bushy and foliated to center; masses of fibrous roots. Finished specimens from 4 inches up, ready for quick shipment. Prices lower, plants larger. Ask for special list. **CANTERBURY NURSERIES, Inc., Box A, Easton, Md.**

LINING-OUT STOCK

CONNECTICUT VALLEY GROWN

Write for List

C. E. WILSON & COMPANY, INC.
Manchester, Conn.



EVERGREENS

For Seventy years growers
of Quality Evergreens
Lining Out Stock a Specialty
Spring Trade List Now Ready

EVERGREEN NURSERY CO.
Established 1864 : STURGEON BAY, WIS.

Forty-seven Years of Selling

The Methods Whereby a Michigan Firm Has
Built a Large Business in Strawberry Plants

The essential elements of mail-order selling are few in number, but many concerns have found them to be elusive. Given a good product, the right price and adequate advertising, it would seem—and has seemed—that success would be assured. It is the very simplicity of the thing that is so apt to mark a campaign for failure.

Therefore, an outline of the experiences of a company that has found out how to sell by mail will prove interesting and often valuable to other mail-order sellers. When those experiences stretch over almost a half-century of time, the record of success and failure, trial and error, is significant.

That's why I asked S. F. Beatty, secretary and treasurer of the R. M. Kellogg Co., Three Rivers, Mich., to relate his company's experiences, ranging from a brief account of the founder of the company, to the value of color in mail-order advertising, the value of pre-testing, and the length of time a name should remain on the mailing list.

Russell M. Kellogg was an old Civil war army captain who decided to capitalize on his hobby—selective breeding with the object of racial improvement as applied to plants. "He always fascinated me as a boy," says Mr. Beatty, "because he was a soldier. I can remember well how he applied soldier tactics to the managing of his farm. For example, his field force was called a field brigade. Each morning the men were lined up in military formation and roll was called in military manner. At the end of the day the same thing was done and the men were dismissed in military manner."

Originally Mr. Kellogg started in business growing strawberry plants and other small fruit plants. This was back in 1887 and he started advertising at that time. Before long he saw the possibilities of growing strawberry plants alone and specializing in one line, so he discarded all other small fruit plants. The business was brand new. Others may have been engaged in growing strawberry plants only, but they did not advertise and were practically unknown.

Early Customer Now Heads Firm.

The present head of the company is F. E. Beatty, who became one of Mr. Kellogg's first customers. In speaking of his father S. F. Beatty says: "He had decided that there was a real opportunity to make money out of strawberry growing. He became so enthusiastic, in fact, that he made several visits to the Kellogg farm and the two built up a close friendship. Mr. Kellogg later hired my father to manage the business and when Mr. Kellogg died my father made arrangements to purchase it. That was in 1905.

"Then probably 5,000 orders was a good year's business, but this number has increased steadily from year to year. In 1933 it was nearly seven times that amount in spite of increasing and doubly increasing competition.

"The best indication of my father's personality is given in a piece of copy

This article, reprinted from the March 8 issue of *Printers' Ink*, gives the high lights on the successful mail-order methods of a nursery firm, the R. M. Kellogg Co., Three Rivers, Mich., based on an interview by Frank H. Meeks with S. F. Beatty, secretary and treasurer of the Kellogg company.

he wrote back in 1926 for a full-page advertisement:

Most of you Rural New Yorker readers are farmers and I am a farmer and so this is going to be a farmer to farmer chat. I was born and raised on the farm and am still living and working on my 400-acre farm. Have done everything from plowing to harvesting; carried sheaves and shocked grain bare-footed, hauled manure, built rail-fence, chopped wood, made apple butter, grew corn, fattened hogs and butchered and "raised cane" and made sorghum molasses. Now, I am growing berries and making money instead of making molasses.

I began growing berries in Indiana thirty years ago. Didn't make much money because I didn't know the trick. R. M. Kellogg was a berry expert and was making a lot of money. He knew how to produce heavy fruiting plants and how to produce big crops. He was getting old and so he gave me the secret of his big crops and big profits. It didn't take me long to learn that the biggest part of Kellogg's secret of big crops was in the fruitfulness of his plants.

"That advertisement was one of the best pulling advertisements we ever ran.

I firmly believe that this was due to the sincerity of the copy and the fact that he was talking his prospects' own language."

Mr. Kellogg proved that a mail-order business could be built and could survive for many years on a single specialty. But at the present time the company has added many other plants and bulbs.

"Until a few years ago," comments Mr. Beatty, "the business remained entirely strawberry plants and even as late as five or six years ago whenever we introduced a new plant or bulb it was without any idea whatever of its crowding out or affecting the strawberry business. The reign of strawberries was never even slightly threatened until flowers and shrubbery came in. Once these got a foothold they become so fascinating that they simply could not be resisted. Gradually they have come to the top like so much cream, until they are now a big part of our business."

"You know, Mr. Beatty," I interjected, "the problems that all mail-order people have to cope with. Won't you

RASPBERRIES

"Mosaic Free"

Latham and Chief

ANDREWS NURSERY CO.
Faribault, Minnesota

FREDONIA-GROWN

Grapevines — Currants
Raspberries

WEST HILL NURSERIES,
M. E. Roesch, Mgr. Fredonia, N. Y.

MASTODON EVERBEARING STRAWBERRY PLANTS

For sale in quantities from 1000 to
100,000 plants. Write for prices.

SOUTH MICHIGAN NURSERY
Box W10, New Buffalo, Mich.

SPECIALTIES — Small Fruit Plants

Grapevines, Currant, Gooseberry, Red
and Black Raspberry Suckers and Trans.
Strawberry, Rhubarb, Asparagus

L. J. Rambo's Wholesale Nursery
Bridgman, Michigan

20,000 CARAGANA

Siberian Pea Tree Hedge Plants
In sizes 6 to 12 ins. up to 3 to 4 ft.
Dandy roots cut under.

PENTSTEMON GRANDIFLORA

The new lavender, bell-shaped flowers
on tall spikes. A beautiful hardy
perennial that's coming to the front rapidly.
Write for lowest prices.

SWEDBERG NURSERIES, BATTLE LAKE, MINN.

FOSTER NURSERY COMPANY

INC.

Fredonia, N. Y.

Wholesale Growers of Grapevines, Currants
and Gooseberries.

Write us for prices.

In the heart of the Chautauqua Grape Belt.

New land — Heavy-rooted STRAWBERRY PLANTS

We have them by the millions. Mastodon,
Gibson, Dunlap, Blakemore and Pearl.

Wholesale Prices

WESTHAUSER NURSERIES
Box 99 Sawyer, Mich.

PEACH PITS

OUR PITS COMPARE FAVORABLY
WITH THE BEST

HOGANSVILLE NURSERIES
Hogansville, Georgia

Apple, Peach, Evergreens
and Heavy Privet
for sale at a bargain.
Quality cannot be beat.

Blountville Nurseries, Inc.
Blountville, Tenn.

For Home and Orchard Plantings

MALONEY'S

Offer a Complete Line at
Enormous Reductions

Send us your list of requirements

Well Equipped to Handle Dealers' Trade

MALONEY BROS. NURSERY CO.

Danville, New York

E. P. BERNARDIN PARSONS, KANSAS

Established 1870

Specializes in
**AMOR PRIVET, SHRUBS,
EVERGREENS**
and
SHADE TREES
for the great Southwest.

Dormant, Field-grown Rosebushes

HOWARD ROSE CO.
Hemet, California

CHINESE ELM SEED

1934 Crop. Hardy North China
strain. Shipment in May.
WASHINGTON NURSERIES
Toppenish, Wash.

NEW AND RARE NURSERY STOCK

BRUCKENTHALIA spiculifolia. Hardy, heather-
like plant, fragrant pink blossoms.
ILEX PENNYI. The new heavy-bearing holly.
DAPHNE Genesum. The new tree-blooming
strain; hardy; all sizes from liners to spec-
imen plants.
Stock limited; place your order early.
THEO. ALBERT Centralia, Wash.

PIN OAKS

Lining-out sizes
6-9, 9-12, 12-18 and 18-24 inches
Large Trees for permanent planting
5-6, 6-8 and 10-12 feet
Arthur L. Norton Nurseries
Clarksville Missouri

WAX

ROSE BUSHES and
Other DECIDUOUS
TREES and SHRUBS
with CLARK'S
Nursery PARAPIN-Dip-WAX!
Safest, Safest, Cheapest — Manufactured by
WALTER E. CLARK & SON
Box C, Milford, Conn.

talk freely of your experiences and views
in handling these fundamentals of direct-
by-mail selling?"

"Well," replied Mr. Beatty, "we have
400,000 names on our mailing list. This
list has been built entirely through ad-
vertising in magazines. These names in-
clude both active and inactive customers.
We add anywhere between 50,000 and
100,000 names a year and discard about
the same amount. We keep a name on
our list as long as it is profitable. When
a customer orders from us we put his
name on the list, but if he fails to order
for two or three years running, we take
it for granted that he is no longer in-
terested.

No Set Advertising Appropriation.

"The major part of our advertising
appropriation is spent in farm papers
and those publications having a large
circulation among flower lovers. We have
no set advertising appropriation. It
varies a whole lot from year to year.
We have spent as little as \$3,000 in
magazines and we have spent as much
as \$45,000. The amount that can be
spent profitably seems to be limited on
account of the fact that we must do all
our advertising in a very short period
of time. Of course, we spend a great
deal more on our catalogues, literature
and postage.

"The relation between advertising
costs and sales varies a whole lot from
year to year and seems to depend upon
business conditions. I have on several
occasions taken business charts that can
be found from time to time in many
business magazines and compared these
with the ups and downs in our business.
Almost without exception the hills and
valleys come in the same places.

"For the last several years we have
found that folders and other illustrated
material are much more profitable than
letters. We have not kept any compara-
tive checks on this, but those letters we
did send out did not even produce so
much of a ripple as a pebble would if
dropped into the ocean. This may, of
course, prove that our letters were
wrong, rather than that letters do not
pay.

"In general we seem to find that some
items featured in our catalogues pull
just as well in black and white as in
color. Color seems to pay exceedingly
well when applied in the right place, but
the difficulty seems to be in applying it
in the right place. In spite of all the
uncertainty we have experienced in the
use of color, my personal opinion is that
color is more valuable than black and
white if judiciously used and by that I
mean that a man must use some kind of
horse sense on the subject.

"I think that nobody realizes the
value of making tests and experiments
in mail-order work more than I do. Yet
this simple fact remains which prevents
a firm of our size from making too
many: To make a really worth-while
comparative check, one must keep very
close to records and stand high mailing
costs per unit and count on usually at
least one side of the test being unprofit-
able; so that in the end if a large num-
ber of tests were made in order to ob-
tain all the information we would like to
have, the results would be very expen-
sive. And so we make only a limited
number each year, contenting ourselves
with relying upon established practice
for the balance of our judgment.

"Perhaps," continued Mr. Beatty,
"you have noticed that our plants and

QUICK SHIPMENT — NO DELAYS

CHINESE TONKIN CANES

For staking Small Trees, Shrubs,
Evergreens, Dahlias, etc. 8 conven-
ient sizes from 2 ft. to 8 ft.

BURLAP SQUARES

Dutch type, for balling Ever-
greens. Most convenient and eco-
nomical to use. 8 sizes from 14x14
inches to 40x40 inches, in bales of
500 squares.

GRANULATED PEAT

Finely pulverized horticultural
grade in bales containing 22 bushels
or more. Carloads or less quoted
f.o.b. New York or your own city.

RAFFIA

The best natural material for
grafting, budding and tying up. Red
Star, XX Superior and other de-
pendable brands.

INSECTICIDES

Black Leaf 40, Selocide and other
specialties for outside use.

HARDY LILY BULBS

Rubrum, Magnificum, Auratum, Au-
ratum Platyphyllum, Album, Tigri-
num (single and double) for spring
planting out of doors. Case lots.

Send your orders and inquiries for
dependable service and quality to

McHutchison & Co.

95 Chambers St., New York

ELM SEED

Selected 1934 crop
**CHINESE — CORK
AMERICAN**

Shipped early to give longer
growing season.

MORSE LANDSCAPE NURSERY
YAKIMA, WASH.

bulbs are all priced in round figures. In recent years we have followed this practice on the theory that people are economizing all they can and, therefore, do not like to spend 5 cents, 8 cents or 10 cents that a small money order costs, or the small fee a bank usually charges for cashing checks. Therefore, we are using round figures so that they can simply enclose a dollar bill or two dollar bills with their letters. A very substantial percentage of our orders do come in in just that way. Later on, as business conditions improve, we will possibly go back to the odd form of pricing.

"I handle all the advertising and like to do most of the work myself. I like to lay out and write my own literature and plan my own campaigns. Then I usually present them to the agency for advice and criticism. It seems to me that I can keep in much closer contact with things this way than if I leave it to somebody else. This year I have done practically all the work on our entire advertising campaign and if at the end of the season our books show a substantial profit, then perhaps we can say that I'm a successful advertising man. If on the other hand the books should balance on the wrong side—well, one can always blame the depression."

APPLE CROWN GALL STUDIED.

"Crown Gall and Hairy Root of Apples in Nursery and Orchard" is the title of a new bulletin just issued at the New York state experiment station, at Geneva, giving the results thus far obtained in a long-time investigation of this problem. A copy of the bulletin may be obtained upon request to the station.

"The object of the orchard experiment is to test the effect of crown gall and hairy root on the health, growth, time of fruiting and yield of infected trees under New York conditions," says Prof. W. O. Gloyer, plant disease specialist conducting the study. Baldwin, Wealthy and McIntosh trees are included in the test because of the importance of these varieties in New York. The orchard was set out in 1925 and the studies will be continued for another ten years.

Commenting on the results obtained thus far, Professor Gloyer says, "At the time the tree is set it is impossible for the orchardist to foretell how the various root infections may influence the future growth of the tree; hence it is advisable for him not to plant infected trees. The nurseryman should consider as culls all trees showing crown gall and hairy root, but he should be allowed to prune lateral roots on which galls are present, provided their removal does not mutilate the root system so as to make the tree a cull.

"Neither a relaxation nor a modification of the present inspection regulations is warranted for this state. An acquaintance with the signs and symptoms of the infectious diseases, as well as the variations of normal rootstock development of different varieties and on various soils, appears to be the greatest means of establishing uniformity of inspection. Proper understanding of the difficulties encountered in the production of a normal apple tree will lead to an increase in toleration and the elimination of controversy between orchardist, nurseryman and nursery inspector."

ORNAMENTAL APPLES.

A list of seventy types, with a brief description of each, appears in a circular entitled "Ornamental Apples and Crab Apples," just issued by the New York agricultural experiment station. Practically all of the kinds listed may be obtained from American nurserymen.

"One or more of the kinds of crabs may be used for each purpose that almost any other tree or shrub may fill in the landscape design, and the special value of each is noted," says Prof. G. P. Van Eseltine, station pomologist and author of the circular. "They may be used as specimen shrubs or trees on the lawn, shrubs for the corners of buildings, background plants in the shrub border, park trees and hedges. For the latter purpose, one may use shrubby types and hold the hedge to five or six feet in height or taller types may be employed for a height of fifteen to twenty feet.

"Perhaps the charm of bloom makes the greatest appeal, but those who appreciate the value of attractive fruit should pay especial attention to some of these plants, particularly the Asiatic types. These fruits are nearly all small, yellow to bright red, and are generally borne in great abundance. In many species they may persist on the branches until early spring."

The circular gives directions on propagation, culture, pruning and the control of insect pests and diseases. It also presents a grouping of the varieties by special characteristics, such as double or semidouble-flowered varieties, weeping forms, red-leaved types and the like. A grouping of the varieties according to date of bloom enables one to select varieties that will afford a display from the middle of May to the middle of June.

FOR GOLF COURSES.

The recent greenkeepers' short course at University Farm, St. Paul, Minn., was a complete success. Over fifty men from Minnesota and neighboring states were in attendance each day. Harold J. Reid, of Holm & Olson, Inc., St. Paul, gave an interesting talk on "Beautifying the Golf Course." He named a list of plants, trees and shrubs desirable for this purpose. One of the important points brought out by the speaker was the demand for better surroundings for clubhouses. John Crew, of the Minneapolis park board, presented the matter of practical tree maintenance.

CLASSIFIED ADVERTISING

NURSERY ACCESSORIES

Nurserymen! Make and sell cement stepping stones at big profits. Easy with our improved, easy snap-off forms. Set of three, full directions, \$2.75, express paid. Des Moines Cement-Art Co., 1719-21 Mondamin Ave., Des Moines, Iowa.

Nursery Tools. Leonard Full-strapped Spades, Kunde Knives and Shears, Budding and Grafting Supplies. Free 30-page wholesale catalogue illustrates 600 tools. A. M. Leonard & Son, Piqua, Ohio.

NURSERY STOCK

California Privet, Lombardy Poplars, Oriental Planes, Shrubbery, Evergreens, Perennials, etc., at special prices. Westminster Nursery, Westminster, Md.

Japanese Cherries and Crabs, up to 12 feet; Magnolias, Lennel and Soulangiana, up to 10 feet. A. E. Wohler, Narberth, Pa.

MORE than fifty nursery establishments are using **FELINS** Tying Machines

One nursery alone
is using seventeen

There is a reason—

FELINS
2950 N. 14th St.
MILWAUKEE, WIS.

POSITION WANTED

As manager of production, superintendent or foreman. Can propagate and grow almost anything grown. Can manage labor to best of advantage. Can operate any acreage. I have been in this nursery game all my life and know its ups and downs by actual practical experience. Would like to contact with a live, going concern where ability and experience would be considered and where a connection of a permanent nature would be established. Can furnish the best of references, both as to my qualifications as a nurseryman and my qualifications as a man. Will guarantee my services to any reliable concern. Address No. 3, American Nurseryman, 508 S. Dearborn St., Chicago.

EVERGREEN TREES

	Age	Size	Per 1000
Norway Spruce	5 yrs. TT	12-18 in.	\$22.00
Norway Spruce	5 yrs. T	10-15 in.	14.00
White Spruce	5 yrs. TT	12-18 in.	22.00
White Spruce	5 yrs. T	8-15 in.	14.00
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CATALOGUES RECEIVED.

[In writing for a copy of any of the catalogues reviewed below, please mention that you saw it described in this column of The American Nurseryman.]

Mount Arber Nurseries, Shenandoah, Ia.—Bulletin No. 1 for 1934, offering a large assortment of general nursery stock. Grade counts will appear in the next issue. It is stated. New credit terms specify payment on the first of the second month following the date of invoice.

Wilmore's Dahlia Farm & Nursery, Denver, Colo.—Trade list and retail descriptive catalogue of dahlias, gladioli and ornamental nursery stock. Special presentation efforts are made of the dahlias, excellent half-tone illustrations being features. Wilmore and other originations are described. The back cover is used to present the advantages of Colorado-grown nursery stock.

Onarga Nursery Co., Onarga, Ill.—Wholesale trade list of nursery stock. About one-half the eighty pages contain offers of commercial sizes of ornamental shade trees, evergreens, fruit trees, etc., while the rest of the catalogue covers specialty items, such as roses, aquatics, perennials, including a list of rock plants; gladioli bulbs, and lining-out stock, the last-named filling about seventeen pages.

Charles H. Totty Co., Madison, N. J.—A superlative example of printed publicity, the firm's thirty-first annual catalogue, noteworthy especially for its colored illustrations. The Totty specialties are well represented in mums, hardy and others; roses, carnations and perennials. Its large size, 8½x11 inches, permits effective illustrating and good layout for easy reading. Mention is made of an outstanding yellow climbing rose for 1935. It is undoubtedly a catalogue that will be read by the recipient.

Outpost Nurseries, Ridgefield, Conn.—A 160-page guide to planting materials, covering deciduous and evergreen trees and shrubs, vines and ground covers, roses, fruits and perennials. Using no illustrations, the catalogue provides especially clear and complete descriptive notes of each item as it is listed. An effort is made to cover the entire range of planting sizes, from small to large, everything being priced. An extremely valuable feature of the catalogue is a series of reference charts at the back, arranged for easy use, providing complete data, including height, outstanding characteristics and adaptability in various locations, of all items listed.

Henry F. Michell Co., Philadelphia, Pa.—1934 annual catalogue and spring edition of the wholesale catalogue. The former, as complete as ever, includes 184 pages, the contents requiring two closely printed pages of index. Each section is well planned to give prominence to the newest varieties. The descriptive notes are concise and helpful. About eight full pages of color engravings supplement the copious use of black and white illustrations. Flower seeds receive first attention in the trade publication, new items being well represented. There are also sections devoted to "profit-providing" bulbous subjects, cut flower dahlias, perennials useful for the florist and accessories in large variety.

Harlan P. Kelsey, Inc., East Boxford, Mass.—"Aristocrats for the Garden," presenting offers of hardy native plants and specimen evergreens and the newer and rarer plants in other classifications. Featuring choice materials throughout, the 72-page catalogue gives special prominence to a group of unusual tree, shrub and rock garden items on several forward pages. An exposition of the firm's landscaping services follows. In the evergreen section, rhododendrons are featured, with complete cultural data supplied by Harlan P. Kelsey. Azaleas and lilacs are well represented among the deciduous materials. Photographs credited to members of the firm supply much of the illustrative material, and copious descriptive notes are valuable. The nursery claims forty-eight years of experience.

COLD KILLS AT BOSTON, MASS.

February, 1934, will be remembered at Boston. It was the coldest month ever recorded by the local weather bureau, with a total of 319 degrees below normal for the month. Last year February had an excess of nearly 200 degrees. There were thirty-two inches of snow and 4.45 inches of rain. Sunshine was somewhat above normal, but the low readings made much of it of little value.

Additional evidence of the disastrous effects of the cold waves of the present winter are shown in the killing to the ground of nearly all climbing roses, even in the mild Cape Cod section. Even in southern New England California privet is killed to the ground everywhere. As the season advances, casualties will steadily increase.

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